

REMARKS

35 U.S.C. § 102. Claim Rejections.

Claims 1-69 are rejected under 35 U.S.C. §102(b) as being anticipated by
5 Pelizzoni (U.S. Patent No. 3,659,572).

The Office Action states that Pelizzoni teaches:

- a valve body comprising at least one conduit defined therethrough;
- a first cylinder having a first aperture corresponding to each of the at least
10 one conduit, wherein the first cylinder is rotatable within the valve body between
a first position and a second position; and
- a second cylinder in direct contact with the first cylinder having a second
aperture corresponding to each of the at least one conduit, wherein the second
cylinder is rotatable within the valve body between the first position and the
15 second position;
- such that the first aperture and the second aperture form a single variable
sized opening corresponding to each of the at least one conduit when the first
cylinder and the second cylinder move from the first position toward the second
position;
- 20 wherein the single variable sized opening defines a cross section by which
a passage through the respective conduit is unrestricted (see Figures 3-4).

Applicant disagrees that the claims are anticipated by Pelizzoni.

25 As discussed during interview with the Examiner on 22 September 2005,
Applicant is of the opinion that the invention as now claimed is distinguished
from Pelizzoni for at least the following reasons:

- a) Pelizzoni is concerned with a carburetion system that relies on the
30 creation of a venturi for example, as shown in Figure 3.

b) Pelizzoni does not seek to provide maximum airflow through a conduit as with the claimed invention, but rather seeks to create perturbation of the airflow to achieve atomization of a fuel flow, as shown in Figure 3.

5 Applicant's invention concerns the ability to provide an unrestricted flow path through a valve. To achieve this, the claimed invention provides a pair of cylinders that may be rotated to define an aperture that is "in complete communication with the conduit [when] in the open position." Further, as a result of this arrangement, the cross section of the aperture defined by the cylinders
10 allows for the passing of a working fluid or gas, e.g., air, through the aperture without restriction of the air flow through the conduit. This is just the opposite of what must be accomplished by Pelizzoni.

Applicant has amended the claims for sake of convenience in prosecution, and
15 to clarify features of one or more preferred embodiments. Applicant reserves the right to present the same or similar claims in a related Application.

Applicant has amended independent Claim 1, to claim a variable valve, comprising:

20 a valve body comprising at least one conduit defined therethrough;
a first cylinder having a first aperture corresponding to each of the at least one conduit, wherein the first cylinder is rotatable within the valve body between a first position and a second position; and
a second cylinder directly coupled with the first cylinder having a second
25 aperture corresponding to each of the at least one conduit, wherein the second cylinder is rotatable within the valve body between the first position and the second position;
such that the first aperture and the second aperture form a single variable sized opening corresponding to each of the at least one conduit when the first
30 cylinder and the second cylinder move from the first position toward the second position;

wherein each of the single variable sized openings define a cross section by which a passage through the respective conduit is unrestricted;

wherein flow through each of the single variable sized openings is maximized when the first cylinder and the second cylinder are in the second position; and

wherein each of the single variable sized openings are in a closed position when the first cylinder and the second cylinder are in the first position.

Applicant has amended independent Claim 14, to claim a variable valve apparatus, comprising:

a body having at least one conduit;

a first cylinder coupled to the body, the first cylinder having a first aperture cut therethrough corresponding to each of the at least one conduit, wherein the first cylinder is rotatable between an open position and a closed position; and

a second cylinder coupled to the body and directly coupled with the first cylinder, the second cylinder having a second aperture cut therethrough corresponding to each of the at least one conduit, wherein the second cylinder is configured to rotate between an open position and a closed position;

whereby the first aperture and the second aperture form a single variable sized opening corresponding to each of the at least one conduit;

wherein the first aperture and the second aperture define a single variable sized opening corresponding to each of the at least one conduit by which a passage through the at least one conduit is unrestricted;

wherein flow through each of the single variable sized openings is maximized when the first cylinder and the second cylinder are in the open position; and

wherein the first aperture and the second aperture do not form the single opening when the first cylinder and the second cylinder are in the respective closed positions.

Applicant has amended independent Claim 25, to claim a variable valve apparatus comprising:

- a body having at least one passage defined therethrough;
- a first cylinder coupled to the body, the first cylinder having a first aperture
5 corresponding to each of the at least one passage and configured to move between a first position and a second position; and
- a second cylinder coupled to the body and directly coupled with the first cylinder, the second cylinder having a second aperture corresponding to each of the at least one passage and configured to move between the first position and
10 the second position;
- such that the first aperture and the second aperture form a single variable sized opening corresponding to each of the at least one passage when the first cylinder and the second cylinder move between the first position and the second position;
- 15 such that in the respective first positions, the first aperture and the second aperture define a closed position to cut off flow, and in the respective second positions, the first aperture and the second aperture define a single variable sized opening corresponding to each of the at least one passage by which each of the passages is unrestricted, wherein flow through each of the single variable
20 sized openings is maximized.

Applicant has amended independent Claim 35, to claim a method of assembling a variable valve apparatus having an open position and a closed position, comprising the steps of:

- 25 providing a body having at least one conduit defined therethrough;
- coupling a first cylinder to the body, the first cylinder having a first aperture corresponding to each of the at least one conduit and configured to be moveable such that the first aperture is in complete communication with the at least one conduit in the open position; and
- 30 coupling a second cylinder to the body and directly coupled with the first cylinder, the second cylinder having a second aperture corresponding to each of the at least one conduit and configured to be moveable such that the second aperture is in complete communication with the at least one conduit in the open position;

wherein the first aperture and the second aperture define a single variable sized opening corresponding to each of the at least one conduit by which a flow through the respective conduit is unrestricted when the first aperture and the second aperture are in the open position, such that flow through each of the single variable sized openings is maximized; and

- 5 wherein the first aperture and the second aperture are not in communication with the at least one conduit when the first aperture and the second aperture are in the closed position.

- 10 Applicant has amended independent Claim 46, to claim a valve comprising:
a body;
a first means for channeling a flow through the body; and
a second means for channeling the flow through the body;
wherein the first means and the second means are configured to couple
15 one another and to rotatably move in an opposite direction from one another, thereby forming at least one variable sized aperture; and
wherein the first means and the second means define a single variable sized opening for each of the variable sized apertures by which the channeled flow through the body is unrestricted when the first means and the second
20 means are in an open position to maximize flow through each of the single variable sized apertures, and wherein the first means and the second means define a cross section by which the channeled flow through the body is completely closed when the first means and the second means are in a closed position.

- 25 Applicant has amended independent Claim 50, to claim a variable valve comprising:

- a first rotatable cylinder having a first aperture, wherein the first rotatable cylinder rotates between a first position and a second position;
30 a second rotatable cylinder having a second aperture, wherein the second rotatable cylinder is directly coupled to the first rotatable cylinder and rotates in cooperation with the first rotatable cylinder such that the first aperture and the second aperture form at least one single variable sized opening when the first rotatable cylinder rotates from the first position toward the second position;

wherein the first rotatable cylinder and the second rotatable cylinder define a cross section by which a flow through the single variable sized opening is unrestricted when the first rotatable cylinder is in the second position to maximize flow through each of the single variable sized apertures, and wherein
5 the first rotatable cylinder and the second rotatable cylinder define a cross section by which the flow is closed when the first rotatable cylinder is in the first position.

Applicant has amended independent Claim 59, to claim a variable valve apparatus having an open position and a closed position, comprising:
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a body having at least one conduit defined therethrough;

a first cylinder coupled to the body, the first cylinder having a first aperture corresponding to each of the at least one conduit and configured to be moveable such that the first aperture is in complete communication with the at least one
15 conduit in the open position; and

a second cylinder coupled to the body and directly coupled with the first cylinder, the second cylinder having a second aperture corresponding to each of the at least one conduit and configured to be moveable such that the second aperture is in complete communication with the at least one conduit in the open
20 position;

wherein the first aperture and the second aperture define a single variable sized opening corresponding to each of the at least one conduit in the open position which does not restrict a passage of a flow through the respective conduit, such that flow through each of the single variable sized openings is
25 maximized; and

wherein the first aperture and the second aperture are not in communication with the at least one conduit when the first aperture and the second aperture are in the closed position.

30 Claims 7, 18, 39 and 63 have been canceled without prejudice.

Support is seen in the Application as filed, at least on page 2, lines 11-29; on page 2, lines 34-36; on page 3, lines 5-15 and 25-37; on page 4, lines 3-18 and 27-30; on page 5, line 17 to page 6, line 2; on page 7, line 29 to page 8, line 9;
35 on page 8, line 23 to page 9, line 6; on page 9, line 24 to page 11, line 31; in

Claims 1, 14, 25, 35, 46, 50 and 59; and in Figures 1A, 1B, 2A, 2B, 2C, 3A, 3B, and 3C.

Pelizzoni describes variable venturi carburetors, as seen at least in the Abstract,
5 wherein:

10 "A carburetor having a venturi formed between intake and outlet passages by a pair of rotatable cylinders with aligned, cooperating channels of varying cross section. At the outlet passage, the channels terminate in channel ends conforming to the adjacent passage end. The channels slope gradually to meet the outlet passage when the venturi opening is greatest. The channel bottoms slope toward the central venturi opening, returning deposited fuel to the flow path. The venturi's variable opening serves as a throttle, eliminating the conventional throttle plate. A single jet
15 opens into the venturi and supplies fuel mixture for all throttle conditions, including idle. Idle mixture is controlled either by adjustment of the fuel supply rate or by adjustment of air bled from a premixing vent. Several fuel supply control systems are employable alternatively to vary the fuel supply rate with the venturi opening. A mixture enriching valve is opened
20 for cold starting to enrich the air-fuel mixture without choking. An engine speed controlled governor limit the venturi opening to set the venturi for its optimum opening according to the engine speed and load."

25 As discussed during the recent interview with the Examiner, Applicant is of the opinion that the invention as claimed is patentably distinguished from Pelizzoni for at least the following reasons:

- Pelizzoni is concerned with a carburetion system that relies on the creation of a venturi for example, as shown in Figure 3.
- 30 • Pelizzoni does not seek to provide maximum airflow through a conduit as with the claimed invention, but rather seeks to create perturbation of the airflow to achieve atomization of a fuel flow, as shown in Figure 3.

Applicant's invention concerns the ability to provide an unrestricted flow path of air in a valve, such as but no limited to a fuel injection of similar system. To achieve this, the claimed invention provides a pair of cylinders that may be rotated to define an aperture that is "in complete communication with the conduit [when] in the open position." Further, as a result of this arrangement, the cross section of the aperture defined by the cylinders allows for the passing of air through the aperture without restriction of the air flow through the conduit. This is just the opposite of what must be accomplished by Pelizzoni.

As well, as seen at least in Figure 3 of Pelizzoni, the describes structures do not close, or cut off flow.

In stark contrast:

- In Claim 1 as amended, each of the single variable sized openings are in a closed position when the first cylinder and the second cylinder are in the first position."

- Claim 14 as amended, the first aperture and the second aperture do not form the single opening when the first cylinder and the second cylinder are in the respective closed positions.

- In Claim 25, in the respective first positions, the first aperture and the second aperture define a closed position to cut off flow.

- In Claim 35 as amended, the first aperture and the second aperture are not in communication with the at least one conduit when the first aperture and the second aperture are in the closed position.

- In Claim 46, the first means and the second means define a cross section by which the channeled flow through the body is completely closed when the first means and the second means are in a closed position.

- In Claim 50 as amended, the first rotatable cylinder and the second rotatable cylinder define a cross section by which the flow is closed when the first rotatable cylinder is in the first position.

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- In Claim 59 as amended, the first aperture and the second aperture are not in communication with the at least one conduit when the first aperture and the second aperture are in the closed position.

10 As seen in Pelizzoni, at least in FIG. 2 and FIG. 3, the jet 35 is inserted in the venturi 46, thereby restricting the flowpath. As well, even in the most restricted position of the rotatable members 16,17, as seen at least in Fig. 3, the passage is not closed. It would therefore require significant modification, neither disclosed nor suggested, to provide a valve which closes.

15 As well, there is no suggestion, express or implied, that the rotatable members be modified to meet Claims 1, 14, 25, 35, 46, 50 and 59, as amended. It would take further modification, not taught in Pelizzoni, to meet the Claims 1, 14, 25, 35, 46, 50 and 59, as amended. As Pelizzoni fails to describe or note the advantage of either the creation of an unrestricted opening, to maximize flow, or
20 the provision to close or cut off flow, such modifications are not obvious.

Applicant therefore submits that Claims 1, 14, 25, 35, 46, 50 and 59, as amended, overcome the rejections under 35 U.S.C. §102(b) as being anticipated by Pelizzoni (U.S. Patent No. 3,659,572). As claims 2-6 and 8-13 depend from
25 Claim 1, as Claims 15-17 and 19-24 depend from Claim 14, as Claims 26-34 depend from Claim 25, as Claims 36-38 and 40-45 depend from Claim 35, as Claims 47-49 depend from Claim 46, as Claims 51-58 depend from Claim 50, and as Claims 60-62 and 64-69 depend from Claim 59, and include all the limitations of the Claims they depend from, they are also seen to be patentable
30 as well.

Other Amendments.

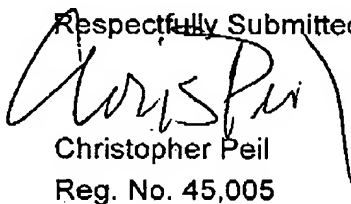
Applicant has amended the Specification, to update information regarding the issuance of the United States Application from which the present Application claims priority.

CONCLUSION

Applicant also respectfully submits that Claims 1, 14, 25, 35, 46, 50 and 59, as
5 amended, and dependent claims 2-6, 8-13, 15-17, 19-24, 26-34, 36-38, 40-45,
47-49, 51-58, and 60-62 and 64-69 overcome the rejections set forth in the
Office Action. Applicant also submits that the amendments do not introduce new
matter into the Application. Based on the foregoing, Applicant considers the
invention to be in condition for allowance. Applicant earnestly solicits the
10 Examiner's withdrawal of the rejections set forth in the prior Office Action, such
that a Notice of Allowance is forwarded to Applicant, and the present application
is therefore allowed to issue as a United States patent.

Respectfully Submitted,

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